Claims

1. A pharmaceutical composition comprising an α-interferon B/D hybrid contained in liposomes formed from a lipid mixture comprising 50 to 75 mol % neutral phospholipid, 20 to 40 mol % cholesterol and 5 to 10 mol % charged phospholipid.

2. A composition according to claim 1, in which the α-interferon hybrid is α-interferon BDBB hybrid.

3. A composition according to claim 1 or 2, in which the lipid mixture has a phase transition temperature of 20 to 30°C.

4. A composition according to any of the preceding claims, in which the major component of the lipid mixture is neutral phospholipid component having a phase transition temperature of 20 to 30°C.

5. A composition according to claim 4, in which the neutral phospholipid component comprises one or more phosphatidylcholines.

6. A composition according to claim 4, in which the neutral phospholipid component is dimyristoyl phosphatidylcholine or a mixture thereof with another neutral phosphatidylcholine, said mixture having a phase transition temperature of 20 to 30°C.

7. A composition according to claim 4, in which the neutral phospholipid component is dimyristoyl phosphatidylcholine.

8. A composition according to any of the preceding claims, in which the charged phospholipid component comprises one or more negatively charged phospholipids.

9. A composition according to claim 8, in which the charged phospholipid component comprises one or more phosphatidylserines.

10. A composition according to claim 9, in which the charged phospholipid component is dioleoyl phosphatidylserine.

11. A composition according to any of the preceding claims, in which the lipid mixture comprises 55 to 70 mol % neutral phospholipid, 25 to 35 mol % cholesterol and 5 to 10 mol % charged phospholipid.

12. A composition according to claim 11, in which the molar ratio neutral phospholipid : cholesterol : charged phospholipid is 9:5:1.

13. A composition according to any of the preceding claims, in which the liposomes have an average particle size up to 200 nanometers.

14. A composition according to claim 13, in which the liposomes have an average particle size pf 80 to 180 nm.

15. A composition according to any of the preceding claims, in which the weight ratio of the α-interferon hybrid to the lipid mixture is from 1:400 to 1:300.

16. A composition according to any of the preceding claims, in which the liposomes are in dehydrated form.

17. A method of preparing a composition according to claim 1, which comprises removing solvent from a solution of a lipid mixture as defined in claim 1 in an organic solvent to give a lipid residue, mixing the lipid residue with an aqueous medium containing an α-interferon hybrid, agitating the resulting mixture to obtain an aqueous suspension of liposomes containing entrapped α-interferon hybrid and extruding the suspension obtained, optionally after dilution with an aqueous medium, through one or more membrane filters.

18. A method according to claim 17, in which an aqueous suspension of the extruded liposomes is dehydrated to give a powder from which liposomes can be reconstituted when required by treatment with water.

19. A method accoridng to claim 17 or 18, in which the α-interferon hybrid is as specified in claim 2, the lipid mixture is as specified in any of claims 3 to 12 and the liposomes are as specified in any of claims 13 to 15.

20. The use of an α-interferon B/D hybrid contained in liposomes in the preparation of a medicament for the treatment of viral liver disease, said liposomes being formed from a lipid mixture comprising cholesterol and at least two phospholipids, at least one of the phospholipids being charged and at least one of the phospholipids being neutral.

21. A method of treating viral liver disease which comprises administering a pharmaceutical composition comprising α-interferon B/D hybrid contained in liposomes to a warm-blooded mammal in need of such treatment, said liposomes being formed from a lipid mixture comprising cholesterol and at least two phospholipids, at least one of the phospholipids being charged and at least one of the phospholipids being neutral.

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